

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
12 May 2005 (12.05.2005)

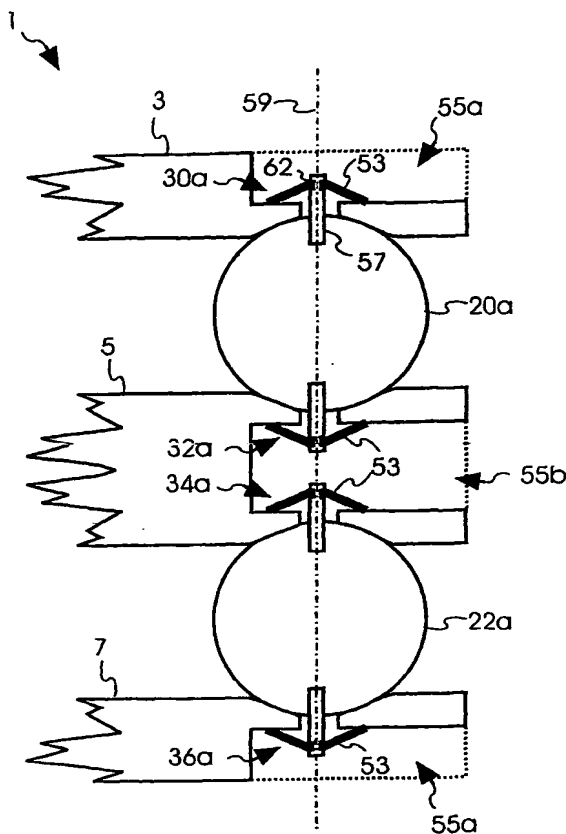
PCT

(10) International Publication Number
WO 2005/043579 A1

- (51) International Patent Classification?: **H01J 37/02**, 9/18, 37/10
- (21) International Application Number: PCT/EP2004/012502
- (22) International Filing Date: 4 November 2004 (04.11.2004)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 03025353.8 4 November 2003 (04.11.2003) EP
- (71) Applicant (for all designated States except US): **ICT INTEGRATED CIRCUIT TESTING GESELLSCHAFT FÜR HALBLEITERPRÜFTECHNIK MBH [DE/DE]**; Ammerthalstr. 20a, 85551 Heimstetten (DE).
- (72) Inventor; and
- (75) Inventor/Applicant (for US only): **FROSSEN, Juergen [DE/DE]**; Kufsteinerstr. 16a, 88521 Riemerling (DE).
- (74) Agents: **ZIMMERMANN, Gerd et al.**; c/o Zimmermann & Partner, Postbox 330 920, 80069 Munich (DE).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,

[Continued on next page]

(54) Title: BEAM OPTICAL COMPONENT FOR CHARGED PARTICLE BEAMS



(57) Abstract: The present invention relates to a beam optical component (1, 201) for acting on a charged particle beam (63) including a first element (3; 203) having a first opening (9; 209) for acting on the charged particle beam (63), at least a second element (5; 205) for acting on the charged particle beam (63); at least one distance piece (20a, 20b, 20c) positioned between the first element (3; 203) and the second element (5; 205) to define a minimum distance between the first element (3; 203) and the second element (5; 205); and a first holding piece (30a; 30b; 30c) for abutting the first element (3) to the at least one distance piece (20a, 20b, 20c), whereby the first holding piece (30a; 30b; 30c) is attached to the at least one distance piece (20a, 20b, 20c). First and second elements (3; 203; 5; 205) are preferably electrodes or pole pieces to act on the charged particle beam by an electrostatic or magnetic force. With the first holding piece (30a; 30b; 30c) attached to the at least one distance piece, distorting mechanical forces on the first and second elements (3, 5) are reduced which improves the performance of the respective beam optical components (1; 201).

WO 2005/043579 A1



ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LU, MC, NL, PL, PT, RO, SE,
SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

— *with international search report*

— *before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments*

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*